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Sandia National Laboratories, California Waste Management Annual Program Report for Calendar Year 2005



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Prepared by
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Sandia National Laboratories, California Waste Management Annual Program Report for Calendar Year 2005

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ABSTRACT

The annual program report provides detailed information about all aspects of the SNL/CA Waste Management Program for a given calendar year. It functions as supporting documentation to the *SNL/CA Environmental Management System Program Manual*. The 2005 program report describes the activities undertaken during the past year, and activities planned in future years to implement the Waste Management Program, one of six programs that supports environmental management at SNL/CA.

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1 Program Summary

The Waste Management (WM) Program is one of six programs under the Environmental Management Department at Sandia National Laboratories, California (SNL/CA). The program oversees the management of hazardous, radioactive and mixed waste. SNL/CA Waste Management is part of the corporate Sandia Waste Management Program. It is a directly funded program by the NNSA/DOE Readiness and Technical Base Facilities Budget (RTFB) supported through the Waste Management Project at Sandia National Laboratories, New Mexico (SNL/NM).

This program description provides detailed information about all aspects of the Waste Management operations. It functions as supporting documentation to the *SNL/CA EMS Program Manual*. The Program Description is updated annually to reflect the dynamic nature of program operations, accomplishments, and goals.

1.1 Hazardous Waste Management

The management of hazardous waste involves a strong partnership between the line generators of hazardous waste and Waste Management personnel. Under the Resource Conservation, and Recovery Act (RCRA) and the California Health and Safety Code (H&SC) all hazardous waste generators are required to characterize, label, store, and dispose of their waste. Hazardous waste includes chemical and medical waste

The management of waste begins with the process and personnel that generate the waste. The generator has the most knowledge of the process that created the waste and the material composition of the waste, and is responsible for the characterization of the waste before it is transferred to Waste Management. Generators work with Waste Management to package waste correctly for collection and transfer to the Hazardous Waste Treatment and Storage Facility (HWTSE, Building 9611). After the waste is accepted at the HWTSE, it is managed according to regulatory requirements appropriate for the specific waste stream. The waste is packaged to meet all DOT requirements for transport. Shipments are accompanied by a uniform hazardous waste manifest and land disposal restriction (LDRs) certifications, as needed. Receipts for wastes received are returned to SNL/CA from the off-site facility to document transfer of waste.

The Waste Information Management System (WIMS) is a corporate information system that tracks the management of hazardous waste onsite from cradle to grave. Once a hazardous waste is generated the generator initiates a Waste Description and Disposal Request (WDDR). This allows the generator to be able to create and print an electronic waste tag, which is placed on the hazardous waste container. After the container is full the generator submits the WDDR to Waste Management for review. Waste Management then approves the WDDR and pickups the waste. The WIMS is used to enter the waste into the HWTSE-9611 and track it during storage at the HWTSE-9611. WIMS also generates the shipping documentation i.e. the hazardous waste manifest and LDRs for the waste to be transported offsite to a treatment storage and disposal facility (TSDF).

1.2 Radioactive and Mixed Waste Management

The management of radioactive and mixed waste also involves a strong partnership between the line generators of radioactive and mixed waste, and Waste Management personnel. Radioactive waste at SNL/CA includes both low-level radioactive waste and mixed waste. Under the Atomic Energy Act (AEA) low-level radioactive waste is defined as radioactive waste that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, by-product waste, or naturally occurring radioactive materials. Mixed waste is a radioactive waste that also contains hazardous chemical constituents. Under DOE Order 435.1, Radioactive Waste Management (DOE 2001b) all radioactive and mixed waste generators must manage their radioactive and mixed waste in a manner that protects the environment, and worker and public health and safety.

The management of radioactive and mixed waste begins with the process and personnel that generate the waste. The generator has the most knowledge of the process that created the waste and the material composition of the waste, and is responsible for the characterization of the waste before it is transferred to waste management. The radioactive waste is characterized by either performing a process knowledge evaluation (PKE) or completing a sampling and analysis worksheet. Once the characterization is adequately characterized to meet the acceptance criteria into the HWTSF-Building 961; the waste is picked up and transferred to the HWTSF-Building 961. The waste is packaged and sealed in certified containers. The waste is certified by the waste certification official for shipment. After the certification is completed, the waste is transported to a disposal site for permanent disposal.

A paper system is used to track the management of radioactive and mixed waste. Once a waste is generated the generator prepares a Radioactive and Mixed Waste Tag. The tag is placed on the waste container with the PKE. After the container is full the generator contacts Waste Management for pickup. The Waste Tag and PKE are used to enter the waste into the HWTSF-961. The shipping documentation is manually prepared for the waste to be transported offsite to a TSDF.

1.3 Transportation of Hazardous and Radioactive Waste Onsite

The Waste Management Program picks up waste from the generator location and transports it to the HWTSF. The waste must be transported onsite as described in DOE Order 460.2A, "Departmental Materials Transportation and Packaging of Management" and the SNL Transportation Safety Document.

1.4 Hazardous Waste Treatment and Storage Facility

SNL/CA operates an onsite RCRA-permitted storage facility for hazardous, low-level radioactive waste and mixed waste. The planned lengths of time for storage vary by waste type. The facility consists of two buildings. The low-level radioactive waste and mixed waste is stored in Building 961, and the hazardous waste is stored in Building 9611.



Figure 1
Hazardous Waste Treatment, Storage and Disposal Facility

SNL/CA accumulates medical waste at the Medical Department (Building 925), where it is picked up monthly for transportation to an off-site facility. Medical waste cannot be stored at the HWTSF.

2 Regulatory/Corporate Drivers

Environmental compliance drivers include laws, regulations, orders, directives, and other corporate and site-specific requirements. The drivers that are applicable to Waste Management are listed and summarized in Table 1.

The WM Program uses a variety of sources to stay current on applicable compliance drivers. The primary source used is the Sandia corporate notification service provided by the legal staff. Sandia legal monitors DOE requirements and federal, state, and local government publications for regulatory issues applicable to SNL operations. These notifications are then reviewed for applicability to SNL/CA operations. The WM Program also receives additional sources of information on regulatory changes. These include direct communication with DOE and regulating agencies, and periodic review of agency web sites. New requirements are incorporated into program activities and communicated to the site through electronic notifications, the ES&H Interdisciplinary Team process, self-assessments, targeted presentations and program documents.

During 2004, no significant changes occurred in compliance drivers applicable to WM Program responsibilities.

The WM Program is periodically audited by the DOE, Sandia Corporation, Lockheed Martin and other external regulating agencies. Under the Nevada Test Site Waste Acceptance Criteria (NTSWAC) DOE Nevada is free to audit the LLW program at any time and conducts announced audits every two years. Under California law, the state of California Department of Toxic Substances Control is free to audit the program at any time and conducts unannounced audits annually. Under California law, the Alameda County Department of Environmental Health is free to audit the tiered-permit program and the medical waste program at any time and conducts unannounced audits every three years.

The WM Program Lead communicates with DOE/NNSA/SSO (SSO) counterparts regularly to keep them informed of issues and trends of importance to the program. WM Program staff at SNL/CA work together with the SNL/NM counterparts and DOE/NNSA/SSO to resolve concerns and to develop effective approaches to program implementation. The WM Program and SSO maintain an open and cooperative relationship.

Table 1 Compliance Drivers for Waste Management Program

Driver	Summary	Regulating Authority
Federal Laws		
Resource Conservation and Recovery Act (RCRA)	RCRA regulates the generation, transportation, treatment, storage, and disposal of hazardous chemical waste, non-hazardous chemical waste, non-hazardous solid waste, and hazardous or petroleum products stored in underground storage tanks (USTs).	Environmental Protection Agency (EPA)
Federal Facility Compliance Act (FFCA)	FFCA waives sovereign immunity with respect to RCRA for federal facilities; gives EPA and authorized states the authority to conduct annual inspections of federal facilities; and establishes requirements for management of hazardous and mixed waste.	EPA
Atomic Energy Act (AEA)	AEA assures the proper management of nuclear materials and radioactive waste.	Department of Energy (DOE)
Federal Regulations		
40 CFR 260-280	Implementing regulations for managing waste under RCRA.	EPA
49 CFR, subchapter C, Parts 171-178	Implementing regulations for transporting waste.	Department of Transportation (DOT)
29 CFR 1910.120	Implementing regulations for the safety and health of hazardous waste workers by setting and enforcing standards.	OSHA
DOE Directives		
DOE Order 435.1, Radioactive Waste Management (DOE 2001b)	Establishes requirements to manage radioactive waste in a manner that protects the environment, and worker and public health and safety.	DOE
DOE Order 5400.5, Radiation Protection of the Public and the Environment (DOE 1993)	Establishes radiation protection standards for DOE operations so that radiation exposures to members of the public and the environment are as low as reasonably achievable (ALARA) and maintained within established limits of the order.	DOE
DOE Order 460.2A Departmental Materials Transportation and Packaging of Management	Establishes requirements and responsibilities for management of DOE materials including waste, transportation and packaging.	DOE

Table 1 Compliance Drivers for Waste Management Program (continued)

California Laws		
California Health and Safety Code, Div 20, Ch 6.5, §§ 25100-25250.) Hazardous Waste Control Law	Hazardous Waste Control Law provides a separate regulatory framework for hazardous waste management in California. The state law incorporates all RCRA requirements and imposes additional requirements that are stricter than RCRA standards.	Department of Toxic Substances Control (DTSC)
(California Health and Safety Code, Division 104, Part 14, §§ 117600-118360) Medical Waste Management Act	Medical Waste Management Act provides for regulation of medical waste generators, transporters, and treatment facilities.	Alameda County Department of Environmental Health
California Regulations		
Title 22 California Code of Regulations (CCR)	Implementing regulations for hazardous waste management, incorporating all RCRA requirements and imposes additional stricter standards.	DTSC

3 Operational Controls

3.1 Hazardous Waste Facility Permit

The primary driver for the Waste Management Program is the California Environmental Protection Agency, Department of Toxic Substances Control (CAL-EPA, DTSC) Hazardous Waste Facility Permit. The permit includes the Hazardous Waste Operations Plan (Part B Permit) for the Hazardous Waste Treatment and Storage Facility (Bldg. 961 and Bldg. 9611) and all additional storage outside of the actual facility buildings.

The Part A Application is Sandia National Laboratories application to permit the operation. The Part B Permit incorporates the waste acceptance criteria, as defined by Federal and State Codes, and quantities allowed in each building and the bays within Bldg. 9611. It also delineates waste analyses and sampling procedures, chain of custody procedures, certification, and transportation requirements. The permit also incorporates specific information on the physical equipment used to handle or transport hazardous waste.

3.2 Hazardous Waste Tiered Permits

SNL/CA has several tiered permits with Alameda County Department of Environmental Health. A tiered permit authorizes a facility to treat or store hazardous waste usually a specific waste stream but does not require a hazardous waste permit under federal law.

SNL/CA has the following tiered permits:

- Two permit by rule permits (both in Building 910)
- Two conditionally authorized permits for neutralization (one at sewer outfall and other at 968).

3.3 Medical Waste Permits

SNL/CA has two medical waste permits with Alameda County Department of Environmental Health. The medical waste permits authorize a facility to manage medical waste. SNL/CA is registered as a small quantity generator with no onsite treatment occurring at the medical facility (Building 965). SNL/CA is also registered as a small quantity generator with onsite treatment occurring only at Building 968.

3.4 Administrative Controls

The Waste Management Program prevents accidents, incidents, exceedances, and violations through both administrative controls and engineering controls. The administrative controls are various Technical Work Documents (TWD) which include (but are not limited to) CPRs, operating procedures, PHS, SWPs, activity-specific plans, department guidance and other management directives. The WM program always follows the most recent version of the specific TWD. A list of the TWDs applicable to the Waste Management Program is in Table 2. Technical Work Documents Applicable to Waste Management.

Table 2 Technical Work Documents Applicable to Waste Management

TITLE		CURRENT VERSION
OPERATING PROCEDURES		
OP471095	Pick-up, Transportation, & Storage of Low Level Radioactive Waste	March 14, 2005
OP471102	Waste Container Inspection for Low-level & Mixed Radioactive Waste	March 14, 2005
OP471125	Nonconforming Item Identification and Tracking	May 6, 2005
OP471131	Data Validation and Verification for the Environmental Operations	September 20, 2002
OP471310	Control of Samples by the Environmental Operations Department	December 18, 2003
OP471345	Control and Documentation of Purchased Items and Services	March 15, 2005
OP471443	Using the Radioactive Waste Management System Database	February 26, 2004
OP471578	Process Knowledge Evaluations	November 1, 2004
OP471606	Management and Certification of Mixed Waste	December 17, 2004
OP471613	Verification of Laboratory Chemical Analysis Data	February 28, 2005
OP471619	Building 961 LECS Sump Operation	September 19, 2002
OP471636	Shipment of Hazardous Waste/Hazardous Material from Building 9611, the Hazardous Waste Treatment and Storage Facility	December 14, 2004
OP471645	Encasing Low-Level Radioactive Waste	August 19, 2002
OP471660	Low Level Radioactive Waste Shipments	March 2, 2005
OP471734	Radioactive Waste Profiles	March 24, 2005
OP471735	Radioactive Waste Sampling and Analysis Plan	March 24, 2005
OP471787	Hazardous Waste Operations at SNL/CA	December 14, 2004
OP472150	Waste Certification and Operations Training	September 9, 2004
OP472165	SNL/CA Environmental Program Representative (EP Rep) Program	April 11, 2005

Table 2. Technical Work Documents Applicable to Waste Management, continued

TITLE	CURRENT VERSION
RADIOLOGICAL WORK PERMIT	
RW471125 Radioactive and Mixed Waste Operations	September 20, 2005
STANDARD OPERATING PROCEDURE	
SP473525 Standard Operating Procedure for the Hazardous Waste Facility, Bldg. 9611	May 26, 2005
SP485007 Low-Level Radioactive Waste, Bldg. 961	March 18, 2005
PRIMARY HAZARD SCREENING	
SNL7A00686-012 Hazardous/Radioactive and Mixed Waste Storage Operations	December 13, 2004
ES&H MANUAL SECTIONS	
ES&H Manual Section 10A Pressurized Drums	March 30, 1999
ES&H Manual Section 10D Polychlorinated Biphenyl (PCBs) Management	April 19, 2001
ES&H Manual Section 10E Chemical Spills	June 10, 1997
ES&H Manual Section 10F Oils, Greases, and Fuels	June 10, 1997
ES&H Manual Section 10L Management of Excess Metallic Lead	January 26, 2004
ES&H MANUAL SUPPLEMENTS	
GN470075 Guidelines for Waste Generators at SNL/CA	May 31, 2005
Other Documents	
SNL Transportation Safety Document	May 20, 2004
SAND2003-8763 Biohazardous Waste Management Plan	January 2004
SAND2004-5882 Medical Waste Management Plan	December 2004
NTS Waste Acceptance Criteria DOE/NV-325-REV.5	December 1, 2003

4 Documents Produced

The Waste Management Program produces a large number of electronic and paper documents in the normal course of business. A description of the routine documents follows. Other non-routine documents are also generated during the year.

4.1 WDDR

The Waste Description and Disposal Request (WDDR) is the primary document the customer uses to request hazardous waste pickup and disposal. This document is electronic and is accessed through the WIMS system on the Sandia Internal Web pages.

The customer initiates the document, and the WM personnel review and approve the forms prior to pickup. These forms produce requisite documents for processing the waste, e.g., waste ID tags for the waste containers and the shipping documents. The WDDR information is maintained in the Waste Information Management System (WIMS) database on a corporate server at SNL/NM. In addition to the review and approval of the WDDRs, WM personnel train the customers and provide ongoing support as needed.

Examples of the electronic forms cited:

WDDR

Uniform Hazardous Waste Manifest

Lab Pack – drum inventory

Emergency Response Guidelines Numbers

Bill of Lading

Land Disposal Restriction Certifications

4.2 Internal Documents Required by OPs

The WM operating procedures require specific documentation. The types of documentation are listed below under each OP.

4.2.1 OP471606 Management and Certification of Mixed Waste

- Radioactive and mixed waste disposal tags
- Accumulation Sheets
- Photographs
- Waste Information System Printouts
- Non-Conforming or Condemned Item forms
- Uniform Hazardous Waste Manifest
- Radioactive Waste Shipment & Disposal Manifest
- Radioactive Materials License from Disposal Facility
- SNL/CA Mixed Waste Shipment Checklist
- Certificate of Disposal from the Disposal Facility
- Shipper
- Hazards Communication Summary
- SNL/CA Mixed Waste Certification

4.2.2 OP461613 Verification of Laboratory Chemical Analysis Data

- Chemical Analysis Report Verification Record Form (Attachment 7.1.)
- Chain-of-Custody Report
- Applicable Limits List
- Analysis Data Report

4.2.3 OP471619 Building 961 LECS Sump Operation

- Health Physics Survey Form
- Analytical analysis package
- Sump Logbook
- Chain of Custody Record and Analytic Instructions

4.2.4 OP471636 Shipment of Hazardous Waste/Hazardous Material from Building 9611, the Hazardous Waste Treatment and Storage Facility

- Hazards Communication Summary
- Uniform Hazardous Waste Manifest (electronic form)
- Lab Pack/Drum Inventory (electronic form)
- SNL/CA Bill of Lading (electronic form)
- Profiles
- Waste Analysis
- Land Disposal Restrictions
- DOT Exemption
- Shipper
- Purchase Requisition
- Emergency Response Guides (electronic form)
- Certificate of Disposal
- SNL/CA Chemical Waste Shipment Checklist
- SNL/CA Hazardous Waste ID Tag
- Waste Storage Facility Operating Log, Containers
- Waste Storage Facility Operating Log, Drums

4.2.5 OP471787 Hazardous Waste Operations at SNL/CA

- Forklift Inspection Report
- Waste Management Vehicle Inspection Report
- Building 961 Inspection Report
- Building 9611 Inspection Report
- Monthly Inspection Verification Report
- Compactor Log Sheet
- Drum Compactor Log Sheet
- Hazardous Waste Disposal Tag
- Training Certificates or class enrollment records
- Chain of Custody Record and Analytic Instructions
- Chemical Analysis Report Verification record
- Analytical results from the contract laboratory
- Environmental Operations Emergency Response Record

4.3 Document File Management

Electronic documents such as the WDDR are maintained in WIMS, but a paper information copy may be kept in the HWTSF for the convenience of the WM personnel. The paper documents are filed in the ES&H Record Center in accordance with OP471347, Administrative Procedure for Managing SNL/CA ES&H Recorded Information.

4.4 External Reports

Table 3 Waste Management Reports

Document	Due Date	Frequency of Distribution	Distribution	Purpose
Annual Hazardous Waste Report	March 1	Annual	CA/EPS/DTSC	Regulatory requirement
Biennial Generators Report	March 1	Every 2 years	CA/EPS/DTSC	Regulatory requirement
Hazardous Waste Facility Permit	March 30, 2014	Every 10 years	CA/EPS/DTSC	Regulatory requirement
Part B Permit Modifications	As needed	As needed	CA/EPS/DTSC	Regulatory requirement
Transporter Permit	April 30	Annual	CA/EPS/DTSC	Regulatory requirement
Site Treatment Tiered Report	30 days from receipt	Annual	CA/EPS/DTSC	Regulatory requirement
Waste Minimization Certification	March 1	Annual	CA/EPS/DTSC	Regulatory requirement
Lockheed Martini: Annual Volumes Waste Shipped Offsite	15 days after fiscal year end	Annual	Lockheed Martin	Corporate Requirement

5 Job Descriptions, Qualifications, and Training

Job assignments in Waste Management include Program Lead, Waste Program Engineer, Hazardous Waste Technician, Radioactive Waste Representative, and Chemist. Job descriptions and qualifications for each assignment follow. Appendix A provides a list of personnel supporting each job assignment.

SNL views training, development, and education as a strategic investment in SNL's future. The policy of Sandia Corporation is to maintain a high level of technical and administrative competence in support of its mission. In support of this policy, SNL maintains a set of general corporate training requirements that cover a wide range of areas such as security (physical, information, computer), business ethics and diversity, general ES&H, and general business processes. Standard corporate requirements are identified for each individual in the online Corporate Education, Development, and Training database at <https://hrprod.sandia.gov/cfdocs/prod/hris/ctd/apps/cedtweb/cedtmain/index.cfm>. The online database tracks completion status for all corporate training requirements and provides electronic reminders when a course is due to Waste Management personnel.

SNL training coordinators identify corporate training requirements for new hires. SNL has developed online training courses to meet these requirements.

In addition to corporate training requirements, each program assignment has job-specific training requirements. These training requirements address safety as well as specific job functions. The Environmental Management Department Manager, Program Lead, or Department ES&H Coordinator may identify job-specific training requirements. Most of these requirements are tracked in the online database. Table 4 presents job-specific training requirements for Waste Management.

5.1 Job Description Summary

- Department Manager for Waste Management is responsible for ensuring the completeness of qualification requirements as defined.
- Waste Program Engineers are responsible for verifying and ensuring that Waste Management personnel are trained and qualified to perform their job responsibilities.
- Waste Management personnel are responsible for maintaining their training as current and providing updated information (including completion certificates, cards, and course content information) to the designated technician within 20 working days after completion of their familiarization and training or receipt of certification.

5.2 Qualifications

Before personnel may work independently in any of the Hazardous Waste Treatment and Storage Facilities, the individual must be qualified to work proficiently and safely. This is accomplished by completing and passing 40 hours of Hazardous Waste Operator Training meeting the requirements of 29 CFR 1910.120. Additionally, three days of on-site supervised training must be completed and documented.

5.2.1 Waste Program Engineer

5.2.1.1 Job description

The Waste Program Engineer directs the Waste Management Program to assure SNL/CA compliance with EPA, OSHA, DOT, DTSC, and DOE regulations and orders for hazardous, radioactive and mixed wastes by providing regulatory and permitting requirement assistance. Additionally the Waste Program Engineer secures funding to support the required activities for waste management operations on-site. Problem solving of technical issues relative to waste generation, minimization, treatability options, disposal, and permitting are necessary. Regulatory and technical assistance is provided to researchers, maintenance, and support personnel to implement the Waste Management program.

5.2.1.2 Qualifications (Minimum Requirements)

- B. S. degree in Environmental Management or equivalent (M. S. degree preferred)
- Member of Technical Staff/Contractor
- Knowledge of hazardous and radioactive materials
- Working knowledge of the following:
 - DOT (49 CFR 171-178)
 - EPA (RCRA and 40 CFR 260-280)
 - OSHA (29 CFR 1910.120)
 - DTSC (H&SC and Title 22 CCR)
 - DOE Orders
 - DOE "Q" Clearance

5.2.1.3 Training requirements

The Waste Program Engineer will attend professional training courses offered by specialists at least once per year. This includes at least one course in environmental issues and regulations. Eight hours of annual refresher training is required. Additionally the Waste Program Engineer is responsible for completing DOT training meeting the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

5.2.2 Field Chemist

5.2.2.1 Job Description

The Field Chemist is typically a contractor from the corporation handling the packaging, storage, and disposal of lab pack quantities of wastes. The Field Chemist will work with the Hazardous Waste Technicians to ensure that the hazardous waste stored in the Hazardous Waste Treatment and Storage Facility is in compliance with the Part B Permit and current State and Federal regulations.

5.2.2.2 Qualifications (Minimum Requirements)

- Degree in natural sciences or engineering
- Qualified to work at the SNL/CA Hazardous Waste Treatment and Storage Facility
- Working knowledge of regulations and hazards associated with hazardous materials/wastes.
- DOE Level "Q" Clearance (or in process)

5.2.2.3 Training

The Field Chemist must be qualified to work at the SNL/CA Hazardous Waste Treatment and Storage Facility. Eight hours of annual refresher training is required. Additionally the Field Chemist is responsible for completing DOT training meeting the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

5.2.3 Hazardous Waste Technician

5.2.3.1 Job Description

The Hazardous Waste Technician functions independently providing assistance to waste generators; collecting, transporting, and packaging waste; and maintaining the Hazardous Waste Treatment and Storage Facilities operations. The technician may not necessarily be trained in all aspects of the listed responsibilities, as training is function-specific. As new responsibilities are added to a technician's duties, the technician will be trained accordingly.

5.2.3.2 Qualifications (Minimum Requirements)

- High School Equivalency
- Qualified to work at the SNL/CA Hazardous Waste Treatment and Storage Facility

5.2.3.3 Training

The Hazardous Waste Technician must be qualified to work at the Hazardous Waste Treatment and Storage facility. Additionally, the technician is required to complete an annual review of classroom and on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the EPA, OSHA, DTSC and DOE. Eight hours of annual refresher training is required. Additionally the Hazardous Waste Technician is responsible for completing DOT training meeting the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

5.2.4 Radioactive Waste Representative

5.2.4.1 Job Description

The Radioactive Waste Representative conducts waste operations to assure compliance with state and federal regulations governing the handling, treatment, storage, and disposal of radioactive and mixed wastes. The Radioactive Waste Representative also performs support activities for the hazardous waste operations in compliance with OSHA, EPA, DOT, DTSC, and DOE. The Radioactive Waste Representative will have knowledge of basic health physics as it applies to collecting samples and safe handling techniques for radioactive and mixed wastes.

5.2.4.2 Qualifications (Minimum Requirements)

- High School Equivalency
- Meet the training requirements of a Hazardous Waste Technician
- Complete RAD II

5.2.4.3 Training

Before Radioactive Waste Representatives are permitted to handle radioactive and mixed wastes, that individual must meet the requirements of a Hazardous Waste Technician in addition to receiving 8 hours of Radiation Safety Training. Once determined that the employee/contractor meets the training requirements of the operating procedures, that person will be permitted to work without direct supervision.

5.3 Training

5.3.1 Personnel-specific training

Specific requirements are outlined in the Part B Operations Plan. The training requirements meet applicable regulatory requirements:

- U. S. Environmental Protection Agency (EPA), Title 40 CFR
- Occupational Safety and Health Act (OSHA), Title 29 CFR
- Department of Transportation (DOT), Title 49 CFR
- California Department of Toxic Substances Control (DTSC), Title 22 CCR
- DOE and SNL/CA requirements
- Corporate ES&H training

5.3.2 Acceptable Training Means

Acceptable means of training include the both external and internal (e.g., Safe Operating Procedures, courses provided by Health & Safety Department). Examples include:

- external classroom courses or seminars
- on the job training
- web-based training
- videos *or*
- other methods approved by SNL or the WM department manager.

5.3.3 Refresher Training

DTSC, OSHA, DOT, or SNL defines the frequency and duration of refresher training; WM personnel will take the refresher courses and document training as necessary. WM maintains personnel training records in order to ensure all personnel remain current on their training.

5.4 ES&H Required Training

The training required by SNL and SNL/CA ES&H is defined in Table 4. Waste Management Personnel Training Course Requirements. Some of the courses are internal to SNL, while others are provided by outside contractors or agencies.

Table 4 Waste Management Personnel Training Requirements

Training Courses Requirements	Training Frequency	Waste Program Engineer	Field Chemist	Radioactive Waste Representative	Hazardous Waste Technician
Confined Spaces Awareness (CNF 105)	Triennial				
Confined Spaces Entry (CNF 107)	Triennial				
Standard First Aid (MED 108)* Adult CPR (MED 104)*	Triennial Annual				
DOT: General Awareness and Function Specific	Triennial				
Emergency Preparedness (ES&H 100)	Annual				
ES&H Rights (ES&H 100)	Annual				
Fire Extinguisher: Awareness (ES&H 100)	Annual				
Fire Extinguisher: Hands On Use (FRP-106)	Annual				
Forklift: Hands On Use (FKL 153)	Triennial				
Forklift Operator Refresher (FKL153R)	Triennial				
HAZWOPER: 8 Hours Refresher	Annual				
HAZWOPER: 40 Hours Initial	One Time				
Three Days Supervised Training	One Time				
Lockout/Tag Out Awareness (ES&H 100)	Annual				
Blood Borne Pathogens (MED 113)	Annual				
Radiation Safety Orientation (RAD 102)**	Biennial				
Radworker Training (RAD 210, RAD 230)***	Biennial				
Respiratory Protection For Users (RSP 215)	Annual				

Shaded area denotes required training

** Optional Requirement*

*** Not required if employee has taken Rad 210/230*

**** May not be required if personnel is a Contractor*

6 Performance Measures

EMS objectives that are applicable to Waste Management include full compliance with regulatory requirements for the management and reduction of waste generated. To assess performance in meeting these objectives, Waste Management tracks the amount of waste generated.

EMS environmental targets and objectives were identified for the Waste Management Program in March of 2005. The performance measures will indicate the degree of success in meeting those targets. The targets for the Waste Management Program are:

- To reduce the site's generation of routine hazardous waste by 10%

In order to meet these measures the following activities will take place during calendar year 2005.

- Investigate availability of a rag laundering service
- Develop a process to modify hand washing in security operations (gun range)
- Investigate how SNL/CA manages hazardous waste generated by a contractor

The Waste Management Program has performance measures that are continuously used to assess the performance and effectiveness of the program. The measures are:

- Meet all regulatory monitoring requirements (HW, LLW, MLLW)
- Meet regulatory report due dates (annual)
- Direct involvement with line and the Environmental Representative (EP Rep) about WM issues.
- Meet quality assurance accuracy, precision and completeness goals
- Compliance with CALEPA/DTSC permit requirements
- Compliance with DOE 435.1 requirements

Currently the Program is meeting all regulatory report due dates. The quality assurance accuracy, precision and completeness goals were met for the annual hazardous waste sampling. The WM Program staff continues to have direct communication with the line and EP Rep through IDT meetings, direct phone calls and presentations to department staff.

7 Quality Assurance

The WM Program applies the following program-specific elements to assure quality is maintained in data collection, analyses, and reporting.

- Online and hardcopy forms ensure that a standard process is followed for collection and management of waste data.
- All data input is reviewed for accuracy after the input is complete.
- Internal reports and documents are subjected to internal review and technical editing before finalizing.
- Published reports are reviewed by DOE/SSO and applicable SNL/CA staff before finalizing.

8 Program Assessments

Waste Management will perform the following assessments:

8.1 Program Self Assessment

The Program Self Assessment is an annual effort to determine the completeness, quality and efficiency of the program structure and management. It shall also be used to determine the alignment of the program with ISO14001 EMS requirements and principles.

The objective of this assessment is to assure that the program provides all of the required elements and continually strives for areas of improvement. This assessment will include a review of all procedures, processes, technical work documents, web pages, publications, communications, etc. of the program to assure that they are streamlined, accurate and current. The *Programmatic Document Review Form* should be used to document this part of the self-assessment, as referenced in the *Quality Assurance of Data, Documents and Select Activities of the Environmental, Safety and Health Departments, 8516 and 8517*.

An attempt shall be made to coordinate with SNL/NM on the self-assessments. If possible, the SNL/NM personnel will perform an assessment of a portion of SNL/CA's program each year.

8.2 Program Line Implementation Assessment

The Program Line Implementation Assessment is an annual effort to determine how well the line or site is implementing the provisions or requirements of the program or supporting specific program-related objectives/targets. The success or failure of the line or site to implement program requirements or provisions can be attributed to many things: culture, line management support, communications, program management, etc. (Note: Poor program implementation by the line may not necessarily indicate poor program management or execution, but the Program Lead should consider whether these are contributing factors and take appropriate action.)

Significant line violations to program requirements that are discovered during this assessment shall be input into the ES&H Self Assessment database for communications and tracking. (Note: the assessment should be "big picture" and not just conducted to

find violations.). The completed finding form is submitted to the Division 8000 ES&H coordinator for entry into the self-assessment tracking system.

In conducting these assessments the Program Lead shall consider aligning with the scheduled Line Self Assessments conducted by the ES&H Coordinators. This will minimize the disruption to the line and gain the manager's attention.

Two additional department assessment activities will be conducted within the department to determine the implementation of environmental program requirements by the line. The results of each of these shall be provided to the Program Leads to be used as additional input to either of the above two required program assessments:

8.3 Environmental Representative Program Assessment

The Environmental Programs Representative will perform and record informal assessments of line implementation of critical program elements. The Waste Management Program Lead will work with the Environmental Programs Representative to develop the specific items to be assessed during these informal assessments. These are not formally scheduled but are conducted on an on-going basis as part of the EP Reps scope of duties.

8.4 IDT Requirements Follow-Up Assessment

IDT reviews may generate environmental program requirements that the line presenter must address as part of the execution of his project. The IDT Requirements Follow-Up Assessment is a random "spot check" on a percentage of projects presented at IDT to determine if the requirements that were given as a result of IDT were implemented by the line. The Environmental Program Representative / IDT Coordinator will perform this follow-up assessment. The results of these follow-up assessments may be useful input into the program self-assessments. See OP471680. The Waste Management Program Lead will review the results of the "spot checks" with the EP Representative in December of each year.

All four assessments described above shall be documented and retained in accordance with OP471347 Administrative Procedures for Managing Sandia/CA ES&H Recorded Information.

9 Accomplishments

Over the last 12 months (July 2004 through June 2005), Waste Management accomplished the following activities.

- Assisted the site in obtaining the EMS site goal for reduction of hazardous materials onsite by 10%. Waste Management incorporated the additional hazardous waste generated from the reduction into their normal pickup schedule. The exception was Department 8762's reduction of hazardous materials. The

volume was significant enough to require Waste Management to obtain assistance from a disposal company.

- Waste Management implemented a pilot empty container-recycling program at the Building 910 PCB lab. The pilot was a success and in September 2004 SNL/CA implemented the program site-wide.
- SNL/CA obtained approval from DOE/NTS to package and ship all the nonconforming items (legacy radioactive sources) stored onsite to the NTS. The waste was shipped to NTS in early April 2005.
- SNL/CA packaged and shipped all of the mixed waste stored in HWTsf-961. The waste was shipped to Perma-fix in early April 2005.
- The new compactor was installed in Bay 9 in the HWTsf-Building 9611. A representative came to SNL/CA in May 2005 to conduct training for all the users (WM and Maintenance personnel).

10 Trends

10.1 Budget Trends

In the middle of fiscal year 2005 Sandia National Laboratories, New Mexico (SNL/NM) experienced significant budget reductions. As a result of the reductions, SNL/CA's Waste Management budget was reduced by approximately \$100,000. The budget was reviewed and the decision was made to transfer the Radioactive and Mixed Waste Management program responsibilities to SNL/NM's Radioactive Waste/Nuclear Material Disposition Department. This reduction also resulted in the loss of a contract position. Waste Management is anticipating reductions in the budget will continue to be the trend in the future.

10.2 Waste Generation Trends

Over the past few years SNL/CA has seen a significant reduction in the volume of radioactive waste generated onsite. However, there are still several areas onsite such as Building 979 machine shop and Building 928 vault that contain radioactive contaminated materials. These materials will eventually have to be disposed of as radioactive waste and would result in a large volume of waste being generated and disposed of. Once these areas are cleaned, the generation of radioactive waste should be minimal.

Over the past three years SNL/CA has seen a decrease in the generation of routine hazardous waste. See Table 5. Routine Hazardous Waste Generated at SNL/CA. SNL/CA anticipates the generation of routine hazardous waste will continue to decrease with the pollution prevention program activities increasing.

Table 5 Amount of Routine Hazardous Waste Generated at SNL/CA

FY 2003	FY 2004	2 nd Quarter FY 2005
34,940 kgs	17,880 kgs	12,650 kgs

10.3 Waste Regulatory Trends

Waste Management is not aware of any upcoming local, state or federal regulatory changes affecting Waste Management at SNL/CA.

11 Goals and Objectives

EMS environmental goal for the SNL/CA Waste Management program is to reduce the quantity of hazardous waste generated at SNL/CA. Table 6 presents SNL/CA EMS objectives, targets, and actions that support this Waste Management goal.

Table 6 EMS Objectives, Targets, and Actions Supporting WM Program Goals

Objective	Target	2005 Action Items	2006 Action Items
Meet or exceed environmental requirements	Conduct annual program assessment.	Complete assessment by December 15, 2005	Complete assessment by December 15, 2006
	Create corrective action plan for all non-compliance issues	TBD	TBD
	Receive zero findings from DOE or external regulatory audits	Incorporate program assessment corrective actions into program	Incorporate program assessment corrective actions into program
	Receive no Notices of Violation from any external regulatory audit	Incorporate program assessment corrective actions into program	Incorporate program assessment corrective actions into program
Reduce quantities of hazardous waste generated	By the end of FY07 reduce the site's routine hazardous waste quantity by 10% per capita.	Investigate availability of a rag laundry service. Develop a process to modify hand washing in security operations (gun range)	Establish baseline of amount of mercury containing equipment on site and investigate options for purchasing equipment that is mercury free. Investigate feasibility of a mechanical board preparation system for the 910 plating shop operations.
	TBD	Investigate how SNL/NM and LLNL manage contractor-generated hazardous waste.	
	TBD.	Depending on above: Review and modify contract verbiage (as needed) to include sub-contractor responsibilities for managing their hazardous waste	

Other internal goals set for Waste Management include

- Continue to assist in site achieving the reduction of hazardous materials onsite. Waste Management will continue to incorporate the cleanouts into their routine schedule.
- Complete startup of Compactor and re-negotiate the disposal rates with the disposal company for waste streams that will be compacted.
- Complete transition of SNL/CA Radioactive Waste Management Program to SNL/NM. The transition requires the development of a Memorandum of Agreement that will be approved by both SNL/CA and SNL/NM management. SNL/CA operations and training will be modified to include SNL/NM operations and training. The changes will be documented in SNL/NM procedures as well as in new procedures for SNL/CA. The Mixed Waste Program will be retained by SNL/CA due to the more stringent California hazardous waste regulations. SNL/NM will provide assistance for the radioactive component of mixed waste.

Appendix A: Personnel Assignments

Name	Position	Date Employed with Waste Operations	Radioactive & Mixed Waste Management Activities	Hazardous Waste Management Activities
G. Shamber	Department Manager	Oct 2004	Yes	Yes
M. Brynildson	Waste Program Engineer	July 2005	Yes	Yes
J. Harris	Waste Program Engineer (backup)	May 2002	Yes	Yes
L. K. Ford*	Waste Program Engineer	Jun 1997	Yes	Yes
R. Oteri	Hazardous Waste Technician Radioactive Waste Representative	Jul 2001	Yes	Yes
L. Farren	Hazardous Waste Technician Radioactive Waste Representative (backup)	Jul 1994	Yes	Yes
D. M. Dicker	Hazardous Waste Technician Radioactive Waste Representative (backup)	Mar 1996	Yes	Yes
S. Orth*	Hazardous Waste Technician Radioactive Waste Representative (backup)	Jan 2000	Yes	Yes
M. Clark*	Field Chemist	Apr 2002	No	Yes
Pam Irish*	Hazardous Waste Technician	Jan 2005	No	Yes

** Contractor Position*